

***Drawings***

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the limitation of claims 1,15,28,42: "...at the upper or lower temperature threshold" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Specification***

2. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

The limitation of claims 1,15,28,42: "...at the upper or lower temperature threshold" are not described in the specification.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1,3-15,17-28,30-41 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The limitation of claims 1,15,28,42: "...at the upper or lower temperature threshold" are not described in the specification or shown in the Figures.

Claims 3-14,16-27,30-40 depend on claims 1,15,28.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1,3-15,17-28,30-41 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is not clear what is upper or lower threshold, as recited in independent claims 1,15,28,41?

Claims 3-14,16-27,30-40 depend on claims 1,15,28.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1,3-15,17-28,30-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masami (JP 2001-312249) in view of Kasahara et al. (US 2002/0036633 A1).

As to claim 1, Masami teaches a system to compensate for luminance degradation of a display (Problem to be solved), the system comprising:

a controller coupled to the display and configured to provide power to the display thereby controlling the display luminance (Drawing 1, item 16, paragraph 0005); and

a temperature sensor proximate the display (Drawing 1, item 14, paragraph 0005) and in electrical communication with the controller, wherein the controller is configured to vary the display luminance, based on a temperature measured by the temperature sensor (Drawing 1, items 12,14,16, paragraph 0005, Solution).

Masami does not disclose the controller is configured to decrease the display luminance as the temperature of the display increases through a first temperature range until the temperature reaches an upper temperature threshold.

Kasahara et al. teaches to decrease the display luminance as the temperature of the display increases through a first temperature range until the temperature reaches an upper temperature threshold (fig. 9, item Td, pars. 0109-110).

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate teachings of Kasahara et al. into Masami system in order to prevent display luminance from being damage (par. 0008 in the Kasaharaa et al. reference).

As to claim 3,6-8,17,20-22,30,33-35 Masami teaches the controller is configured to decrease (increase) the display luminance as the temperature of the display is decrease (increase) (paragraph 0005, Solution).

As to claim 15, Masami teaches a method for compensating luminance degradation of a OLED display (Problem to be solved), the system comprising:

providing power to (Drawing 1, item 16, paragraph 0005);

varying luminance of the OLED display based on temperature of the OLED display (Drawing 1, items 12,14,16, paragraph 0005, Solution).

Masami does not disclose the controller is configured to decrease the display luminance as the temperature of the display increases through a first temperature range until the temperature reaches an upper temperature threshold.

Kasahara et al. teaches to decrease the display luminance as the temperature of the display increases through a first temperature range until the temperature reaches an upper temperature threshold (fig. 9, item Td, pars. 0109-110).

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate teachings of Kasahara et al. into Masami system in order to prevent display luminance from being damage (par. 0008 in the Kasaharaa et al. reference).

As to claim 28, Masami teaches a system to compensate for luminance degradation of an OLED display (Problem to be solved), the system comprising:

a controller coupled to the display and configured to provide power to the OLED display thereby controlling the display luminance (Drawing 1, item 16, paragraph 0005); and

a temperature sensor proximate the OLED display (Drawing 1, item 14, paragraph 0005) and in electrical communication with the controller, wherein the controller is configured to vary the display luminance, based on a temperature measured by the temperature sensor (Drawing 1, items 12,14,16, paragraph 0005, Solution).

Masami does not disclose the controller is configured to decrease the display luminance as the temperature of the display increases through a first temperature range until the temperature reaches an upper temperature threshold.

Kasahara et al. teaches to decrease the display luminance as the temperature of the display increases through a first temperature range until the temperature reaches an upper temperature threshold (fig. 9, item Td, pars. 0109-110).

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate teachings of Kasahara et al. into Masami system in order to prevent display luminance from being damage (par. 0008 in the Kasaharaa et al. reference).

As to claims 9-10,13-14,23-24,27,35-37,40-41 Masami teaches degradation function (Drawing 3) and the controller is configured to vary the display luminance based on a transfer function having a linear term (in the reference (paragraph 0009) is equivalent to reducing the brightness of an LED component at a fixed rate).

It generally considered to be within the ordinary skill in the art to adjust, vary, select or optimize the numerical parameters or values of any system absent of showing criticality of in a particular recited value. Thus, it would have been obvious to one of ordinary skill in the art at the time of invention to reduce the luminance 50% of the full power luminance at between 80 and 90 degree. Such a limitation would have been considered as obvious variation on the matter of selected luminance which fails patentably distinguish over the prior art of Masami and Masahara et al. In re Rose, 105 USPQ 237 (CCPA 1955).

As to claims 4,11,18,25,31,38 Masami teaches the controller is configured to vary the display luminance based on a transfer function having a linear term (in the reference (paragraph 0009) is equivalent to reducing the brightness of an LED component at a fixed rate) (Drawings 3-4, paragraphs 0006-0009).

As to claims 5,12,19,26,32,39 Masami teaches the controller is configured to vary the display luminance based on a transfer function having a linear term (in the reference (paragraph 0009) is equivalent to reducing the brightness of an LED component at a fixed rate) which will satisfy following relationship  $Lop = m \cdot Tk + b$ , where  $Lop$  is the display luminance,  $m$  is a gain,  $TK$  is the temperature of the display, and  $b$  is an offset (Drawings 3-4, paragraphs 0006-0009).

#### ***Response to Arguments***

4. Applicant's arguments filed 09/29/09 have been fully considered but they are not persuasive:

On page 12, 1<sup>st</sup> paragraph of Remark, Applicant's stated that it can be readily seen that the luminance of the display changes from an upper luminance value (e.g., "full luminance") at a lower temperature threshold (e.g., "25° C") to a lower luminance value (e.g., "50% of full luminance") at the upper temperature threshold (e.g., "85° C"), as recited in claim 42. For at least the foregoing reasons, Applicants respectfully submit that a drawing is not necessary and the objection to the drawings and specification should be withdrawn. However, nowhere in the originally filed Application including originally filed claims words: "upper or lower temperature threshold" could be located.

Those words were added only in amended claims without any support from the originally filed Specification or Figures.

On page 12, 1<sup>st</sup> paragraph of Remark, Applicant's stated that according to Kasahara, the luminance of a display is controlled by linearly decreasing the luminance as the estimated temperature increases. For instance, if the estimated temperature increases, a multiplication factor is applied to decrease the luminance by a certain percentage. Notably, however, Kasahara does not disclose an upper temperature threshold. In other words, the display luminance will continue to decrease so long as the estimated temperature continues to increase. As such, the luminance of the display will eventually be zero. *See, e.g., FIG. 9.* In contrast, the claimed invention requires an upper temperature threshold so that the display luminance will no longer decrease if the temperature reaches or exceeds the upper temperature threshold. Accordingly, the present invention ensures a certain amount of luminance regardless of how high the temperature may reach (unlike Kasahara). For at least the foregoing reasons, Applicants respectfully submit that the claims are allowable. However, an upper or lower temperature threshold could not be used in claims, because they not supported by the originally filed Specification or Figures.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within



TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

***Telephone Inquire***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonid Shapiro whose telephone number is 571-272-7683. The examiner can normally be reached on 8 a.m. to 5 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe can be reached on 571-272-7691. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/L. S./  
Examiner, Art Unit 2629  
01/04/10

/Richard Hjerpe/

Supervisory Patent Examiner, Art Unit 2629